Docket No.: 1522-0143PUS1
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Dong-Hyun KIM

Application No.: Not Yet Assigned | Confirmation No.: N/A

Filed: March 14, 2005 | Art Unit: N/A

For: ROTARY ENGINE | Examiner: Not Yet Assigned

LETTER

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The PTO is requested to use the amended sheets/claims attached hereto (which correspond to Article 19 amendments or to claims attached to the International Preliminary Examination Report (Article 34)) during prosecution of the above-identified national phase PCT application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §1.16 or 1.14; particularly, extension of time fees.

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Dated: March 14, 2005

Respectfully submitted,

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Attachment(s)

Claims:

1. A rotary engine comprising:

a housing (2) having an intake chamber (32) and an exhaust chamber (34) formed at the inner wall thereof, the intake and exhaust chambers being caved in the inner wall of the housing;

a rotary member (6) rotated in the housing (2) along with a rotating shaft (4), the rotary member including operating chambers (8) having pistons (12) disposed therein, the operating chambers having intake/exhaust ports (14), respectively, the rotary member also including ignition means adjacent to the intake/exhaust ports (14);

shutoff valves (16) for opening or closing the intake/exhaust ports (14) of the operating chambers (8);

shutoff plates (18) for opening or closing the intake/exhaust ports (14) of the operating chambers (8) from the outside of the rotary member (6), the exhaust chamber (34) being partitioned by means of the shutoff plates (18) when explosion occurs so that the explosion stroke is carried out at the rear part of the exhaust chamber (34); and

a guiding member (26) disposed at the center of the rotary member (6), the guiding member (26) being protruded from the housing (2).

2. The engine as set forth in claim 1, further comprising oil seals (28, 30) surrounding the intake chamber (32) and the exhaust chamber (34) of the housing (2), respectively.

3. The engine as set forth in claim 2, wherein the oil seals (28, 30) comprise sealing parts (40, 42) and plate springs (44, 46), both sides of the sealing parts being separable from the housing body of the housing (2).

4. The engine as set forth in claim 1, further comprising oil seals (74) arranged around the intake/exhaust ports (14) formed at the operating chambers (8) of the rotary member (6), respectively.

5. The engine as set forth in claim 1, wherein each of the shutoff valves (16) for opening or closing the intake/exhaust ports (14) of the rotary member (6) is formed in the shape of a rod having a passage (64), and wherein each of the shutoff valves (16) has eccentric guide rods (92, 94) at the upper and lower ends thereof, the eccentric guide rods (92, 94) passing through each of the intake/exhaust ports (14) and engaged in a guide groove (50) formed at the housing (2) so that the opening/closing operation is carried out.

6. The engine as set forth in claim 1, wherein the pistons (12) are guided along a guide groove (48) formed at the housing (2) through guiding pieces (1) connected to shaft rods (58) of the pistons (12) so that the operating chambers (8) are expanded.

7. The engine as set forth in claim 1, wherein the shutoff plates (18) for opening or closing the intake/exhaust ports (14) of the rotary member (6) are rotated about shaft rods (76, 78) inserted in shaft holes (84) of the rotary member (6), the shutoff plates (18) having guide rods (80, 82) engaged in a guide groove (54) of the housing (2) so that the shutoff plates (18) are opened or closed, and the exhaust chamber (34) is partitioned.

8. The engine as set forth in claim 1, wherein compressed air is supplied into each of the operating chambers (8) of the rotary member (6) through air-supplying channels (22) having shutoff valves (20) therein so that gas left in the operating chambers (8) when the gas is exhausted is forcibly discharged.

9. The engine as set forth in claim 8, wherein each of the shutoff valves (20) for opening or closing the air-supplying channels (22) is formed in the shape of a rod having a passage (91), and wherein each of the shutoff

valves (16) has eccentric guide rods (92, 94) at the upper and lower ends thereof, the eccentric guide rods (92, 94) passing through each of the air-supplying channels (22) and engaged in a guide groove (52) formed at the housing (2) so that the opening/closing operation is carried out.